PATENT CLAIMS

1. A linear actuator comprising

a) a cabinet (1) having

b) a reversible electric motor (2) with a motor shaft,

c) a reduction gear with several stages, where a first stage with an input side is connected with the motor shaft,

d) a spindle (4) whose one end is connected with an output side on the last stage in the reduction gear, and the other end of the spindle indicates the front end of the actuator,

e) a spindle nut (5) secured against rotation on the spindle such that this is moved to and fro on the spindle in response to the current direction of rotation of the motor, and wherein the spindle nut may be secured indirectly or directly to the structure in which the actuator is incorporated,

f) a rear mount (8) at a rear end of the actuator likewise for attachment of the actuator in the structure in which the actuator is to be incorporated,

g) an overload clutch (21) which is released at a predetermined torque,

c h a r a c t e r i z e d in that

the overload clutch is arranged in connection with the first stage or one of the first stages in the reduction gear.

2. An actuator according to claim 1, c h a r a c t e r i z e d in that the overload clutch (21) is formed by a ball and ratchet clutch comprising a ring (24) with holes for the balls, and wherein the balls on that side are in engagement with depressions in a first plate (22) firmly connected with the transmission from the motor, and on the other side are in engagement with depressions in a second plate member (27), wherein a spring (28) mounted against the ceiling in a cap (29) keeps the plate member and thereby the balls in engagement, and wherein the cap is secured by a predetermined force directly or indirectly to the first plate member, and wherein the ring with the balls is connected with the further transmission to the spindle.

3. An actuator according to claim 2, c h a r a c t e r i z e d in that the ring (24) with the balls is connected with a shaft member (25) with a gear wheel (31) as a transition to the subsequent stages in the gearing to the spindle.

4. An actuator according to claim 2, c h a r a c t e r i z e d in that the shaft member (25) is connected with a brake device (32-35) to increase the self-blocking capacity of the actuator.

5. An actuator according to claim 2 or 3, c h a r a c t e r i z e d in that the end of the shaft member (25) or an extension thereof is configured to receive a crank through an opening in the cabinet for manual operation of the actuator.

6. An actuator according to claim 1, c h a r a c t e r i z e d in that the rear mount (8) and a bearing (41) for the spindle are secured in a mounting element consisting of two parts (40a, 40b) mounted in a depression in the cabinet and secured with a nut (42) screwed on to the part of the rear mount which protrudes through the cabinet.

7. An actuator according to claim 1, c h a r a c t e r i z e d in that a guide profile (7) for the activation element (6), in addition to being secured with the end to the cabinet, is additionally attached to the cabinet with two claws (11b, 11a) which grip down around the edge on the outer side of the guide profile.

8. An actuator according to claim 1, c h a r a c t e r i z e d in that an electrical control (49) for the actuator is incorporated in the cabinet.

9. An actuator according to claim 1, c h a r a c t e r i z e d in that the end stop positions of the spindle nut are controlled by two electrical switches (54, 55), which are activated by a longitudinally movable element (56) with

two arms (58a, 58b) seated in a slot in a housing (5), said arms having interposed between them a spring (60) whose ends additionally engage a stop in the housing.

10. An actuator according to claim 7, c h a r a c t e r i z e d in that the position of the activation element is determined with a potentiometer (61) constructed as an add-on unit in engagement with down gearing between the safety clutch and the spindle.